

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Claim Listing**

What is claimed is:

1. (currently amended) ~~The method of claim 8, the method utilizing a~~ model system ~~for simulating the performance of a subterranean well~~, comprising:
  - a. a base model;
  - b. an input device for inputting well logging data into the base model;
  - c. an input device for inputting pressure transient data into the base model;
  - d. an input device for inputting PVT data into the base model;
  - e. a numerical interpreter for calculating predicted performance of the well;
  - f. a match system for comparing actual performance data with calculated predicted performance data based on the base model; and
  - g. a reiterative loop for modifying the base model to provide a match between the actual performance data and predicted performance data to optimize the base model.
2. (currently amended) ~~The model system~~ method of claim 1, further including a data editing module for editing the pressure transient data before it is input into the base model.
3. (currently amended) ~~The model system~~ method of claim 1, further including a plotting device for plotting the data generated by the system.
4. (currently amended) ~~The model system~~ method of claim 3, wherein the plotting device is adapted for plotting line fitting on specialized plots.
5. (currently amended) ~~The model system~~ method of claim 3, wherein the plotting device is

adapted for plotting specialized plots providing preliminary estimates of performance data based on the base model.

6. (currently amended) The model systemmethod of claim 3, wherein the plotting device is adapted for generating a 3D display of the well.

7. (currently amended) The model systemmethod of claim 3, wherein the plotting device is adapted for generating performance data plots based on the optimized model.

8. (currently amended) A method for generating optimized performance data in a subterranean well, comprising the steps of:

- a. introducing known pressure transient data, well logging data and PVT data for the well into a base model, wherein the PVT data comprises perforation length and height of a fracture;
- b. producing a performance prediction from the base model;
- c. comparing the performance prediction with actual performance; and
- d. modifying the model to generate a performance prediction that matches the actual performance for producing an optimized model.

9. (currently amended) The method of claim 8, wherein the PVT data further includes non-Darcy factors effecting fluid parameters in the wellnumber of layers involved in the well modeled.

10. (previously presented) The method of claim 8, wherein the optimized model is generated by comparing the performance prediction and the actual performance for a first, known zone and wherein the optimized model is utilized to predict performance data for an unknown zone.

11. (previously presented) The method of claim 10, wherein the model is repeatedly optimized as actual performance data for multiple zones is collected.